

## ABSTRACT OF THE DISCLOSURE

A semiconductor memory device includes a first insulating film provided on a semiconductor substrate between first and second diffusion regions, a first gate electrode provided on the first insulating film, a second insulating film provided on the semiconductor substrate between the second diffusion region and a third diffusion region, and a second gate electrode provided on the second insulating film are included, wherein the first and second diffusion regions, first insulating film, and first gate electrode constitute a first memory cell, while the second and third diffusion regions, second insulating film, and second gate electrode constitute a second memory cell. The first and second gate electrodes are connected in common to form a word line electrode. The first and third diffusion regions are connected to first and second read bit lines disposed on a layer overlying the semiconductor substrate. The second diffusion region is connected to a program and erase bit line disposed on a layer overlying the semiconductor substrate. Programming is performed to a selected memory cell transistor by hot electron injection, while erasing from the selected memory cell is performed by the hot hole injection.